

# Best Practice in Integrated Public Transport

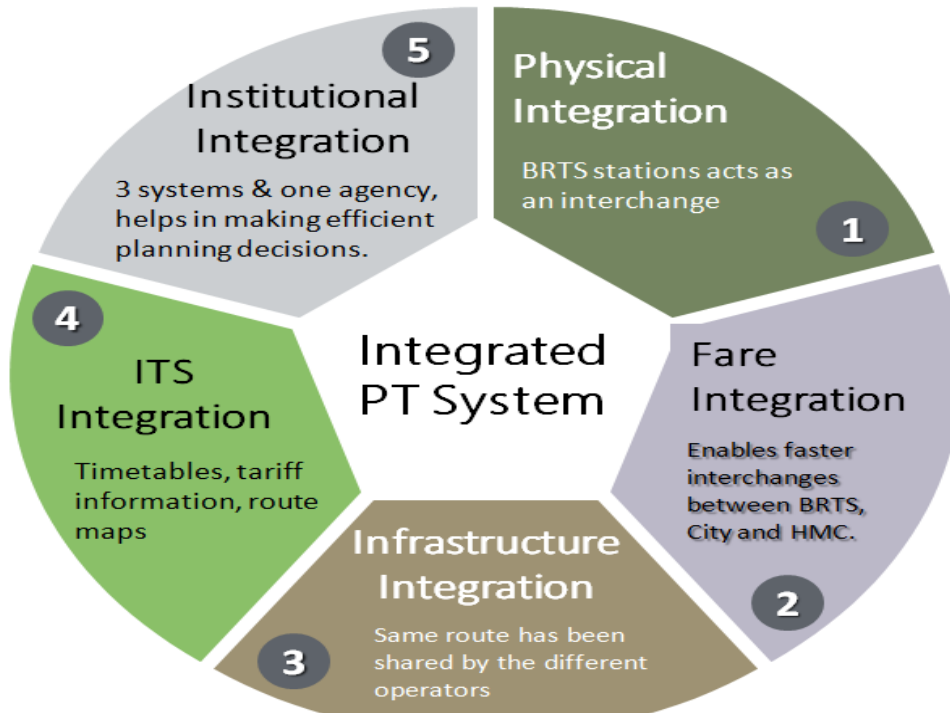


# Mobility Challenges in Surat City

- **Rapid Growth**
  - 2001- 28 lakh Population
  - 2011- 44.6 lakh Population
- **High City Mobility** –70.40 lakh Passenger trips per day
- **Inadequacies in the road network in past**
  - Incomplete Road Network
  - Constraints – River, Canal, Khadi, Railway Line.
- **Increase in Congestion and Travel Time**
  - Decrease in Travel speed from 28 kmph to 18 kmph (from 2011 to 2016)
  - Increase in travel time of 13 mins to 25 mins. (from 2011 to 2016)
- **Rapid growth in vehicles**
  - 16.7 lakh vehicles added in last 10 years



# Surat Integrated Public Transit System



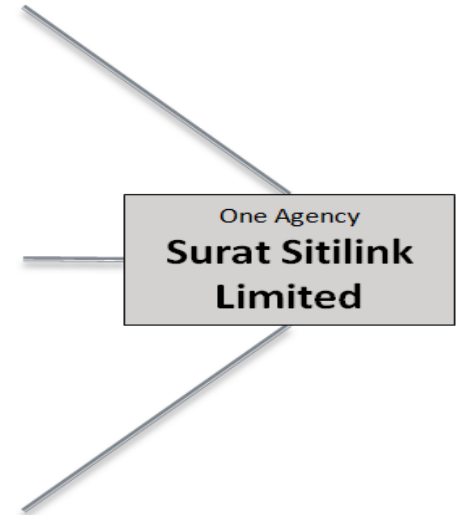
**BRTS**

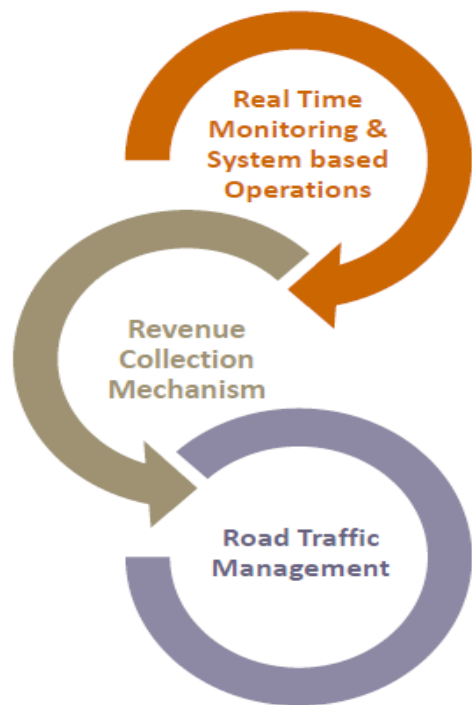


**CBS**



**HMC**





**Intelligent Transit Management System**

**Automatic fare Collection System**

**Integrated Traffic Control System**

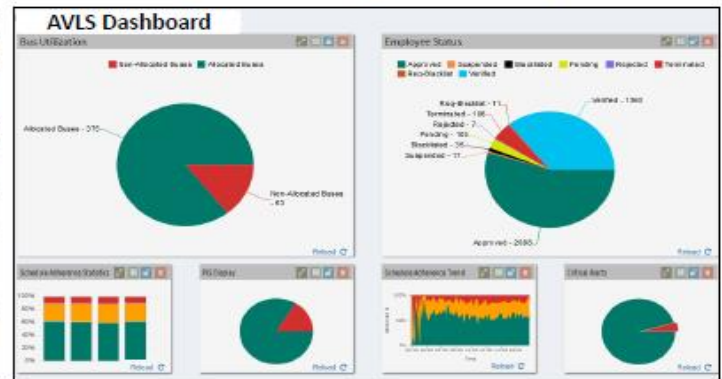
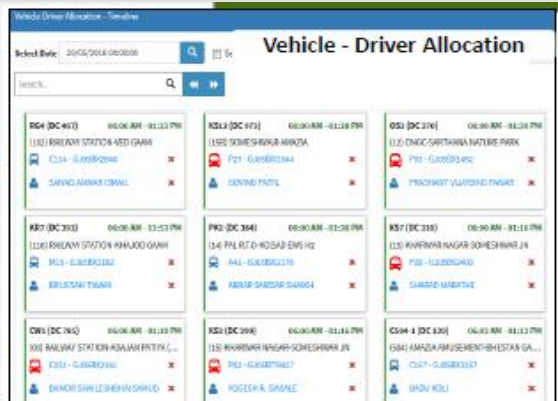
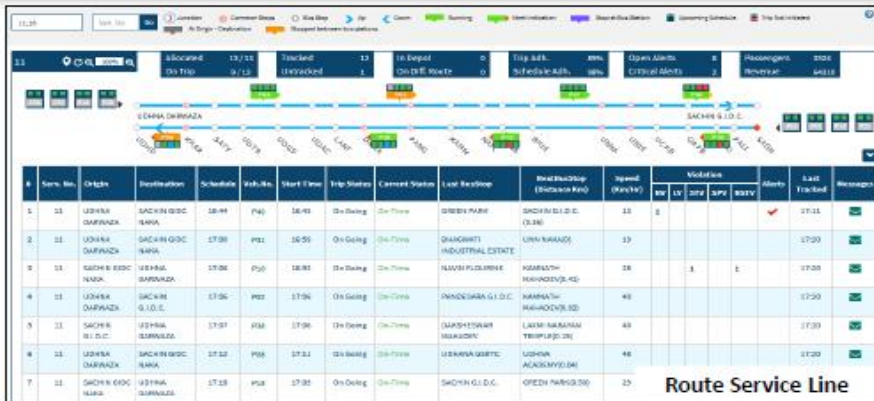
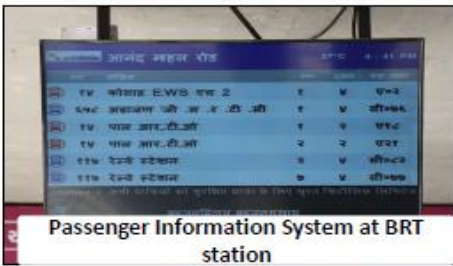
## Overview

- Automatic Vehicle Location System (AVLS)
- Passenger Information system (PIS)
- Depot Management System (DMS)
- Incident Management System (IMS)
- Enterprise Management System (EMS)

- Electronic Ticketing Machine
- Point of Sale (POS)
- Turnstiles with Fare gate Validators
- Swing gates for Differently able commuters
- Pole Validator
- Mobile Application

- Adaptive Traffic Control system
- Red Light Violation detection system
- Automatic Number Plate Recognition system
- Transit Priority Signal
- Speed Control & Speed Violation Detection system
- Traffic Violation Detection system
- Variable Message and speed control Sign Board System
- E-Challan system





# ITS Components - AFCS



Turnstiles



Fare Gate Validators



Point of Sale (POS)



Electronic Ticketing Machine



Pole Validator



Swing Gate





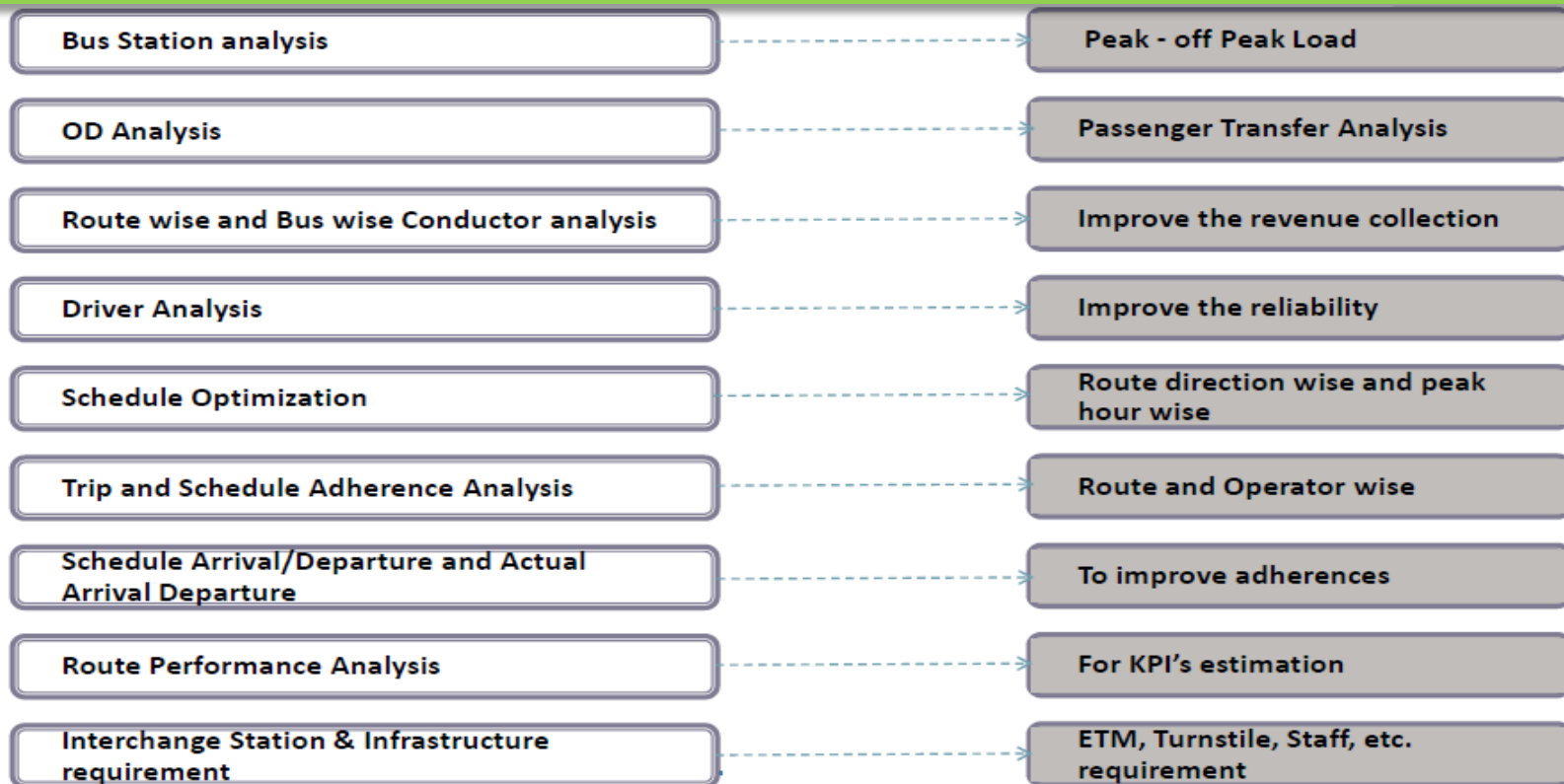
# ITS Components - ITCS



# Application of ITS

## | MODULE |

## | USES |





# Outcome Achieved



## Citizen

- Mobile Ticketing
- Increased reliability and User satisfaction
- Boarding & alighting with one tap using Surat Money Card
- Reduction in Travel Time
- Single Journey with integrated Fare.
- Integration with Google Maps to provide efficient & real time travel information.



## Improved Operation

- Highly flexible fare structure
- Improve on-time operation by shortening passenger boarding & alighting
- Lower equipment & operation cost
- Single established system across the operators
- Transit violations monitoring



## Stakeholders

- Data Driven Decision Making
- Passenger/origin-destination
- Bus services and Frequency planning including last mile connectivity.
- Reduction in private vehicles
- Aid multi-modal integration
- Effective Financing Mechanism



## Society

- Shift from private vehicle to public transportation:
- Reduce traffic congestion
- Surat Money Card support for other SMC services such as Tax, Library, Swimming Pool etc.

# Financing Mechanism for Urban Transportation



# Salient Features of the System

1

Formation of **Special Purpose Vehicle** “Surat Sitilink Ltd” – Subsidiary of Surat Municipal Corporationn to provide the integrated Public Transport Services



2

Surat is the second city in India to include real time transit information via Google Maps i.e. **Google Transit Feed Specification (GTFS)**.



3

**Integrated Public Transport System** with 03 different Services – BRTS, City bus and High Mobility Corridor equipped with ITMS and AFCS components.



4

**Longest dedicated BRTS network** in India with total 108 km length of network



5

**Transit Signal Priority** – Reduction in dwell time at traffic signals for transit vehicles, reduction in travel times, improved schedule adherence, improved transit efficiency & road network efficiency.



6

**Vehicle Planning and Dynamic Scheduling** – Optimization in schedules, reduction in dead kilometres, reduction in emissions



7

Buses converted into Ambulance, Mobile Testing & Vaccination vehicles for special activities during **Covid-19 Pandemic**.





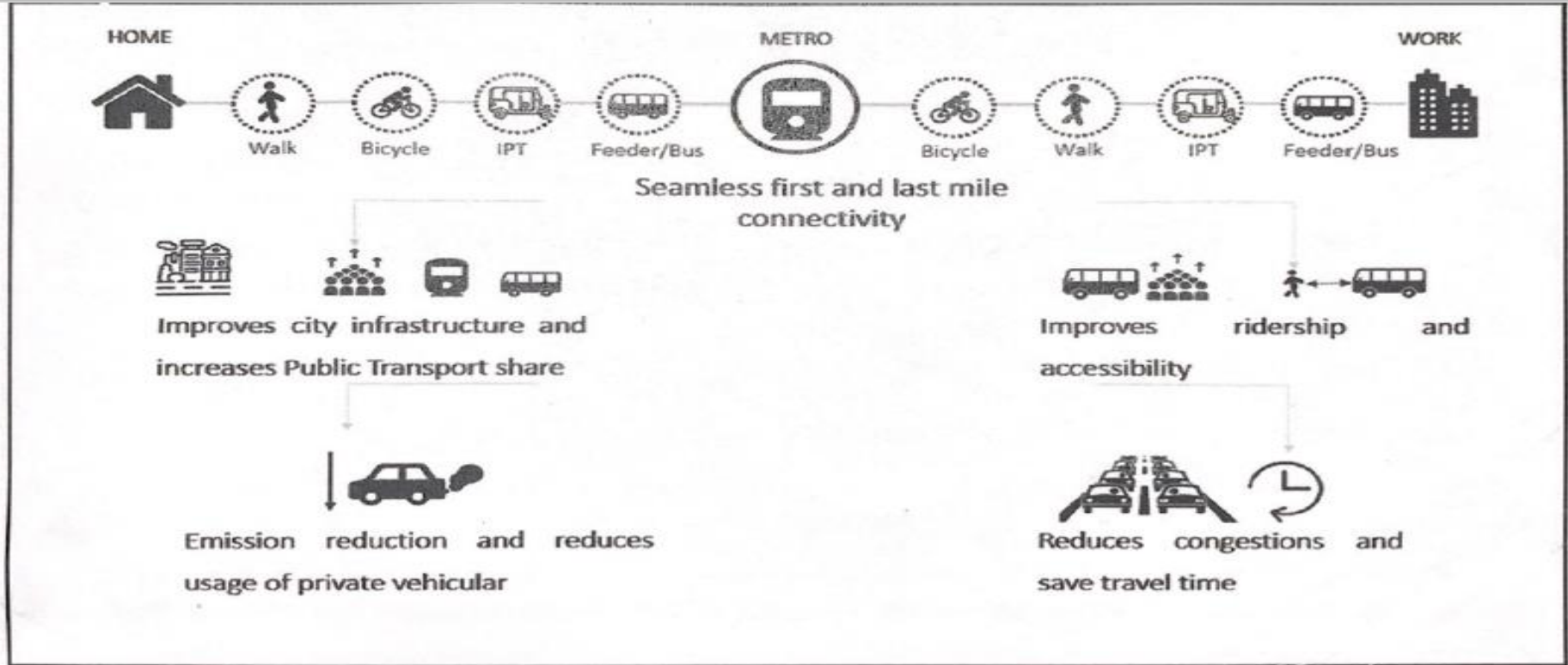
# Public Participation in Transport Planning



- **Stakeholder Consultation Meeting** at Zonal Level.
- **User Satisfaction Surveys** on- board and off-board in every Quarter.
- Feedback through **online complaints, toll free no. and SMC portal.**
- **Public Transport Mobility Committee** has been set up consisting of elected Municipal Councilors for taking up public demand.



# Approach To MMI Planning



# Journey of Surat Public Transport



Before 2007



2007



2014



2016



2018



Towards Sustainable  
Future (2030)



Satisfaction of People

To Reach Maximum Number of  
People

- 453 km of PT network in city
- Integrated Public Transport Approach



2021



# Way Ahead

**1 Electrification of Public Transport: Rolling Stock and Depots**

**2 Integration with Surat Metro**

**3 Promoting Digitalization by Ticketless travelling**

**4 Increasing First and Last mile connectivity**

**5 Route Strengthening and Optimization**



Ministry of Housing and Urban Affairs  
Government of India



The vision **SARAL** in Indian languages means “Simple” which also implies mobility being **Easy, Convenient and Accessible** aimed towards a healthy living environment.

**S : SAFE**

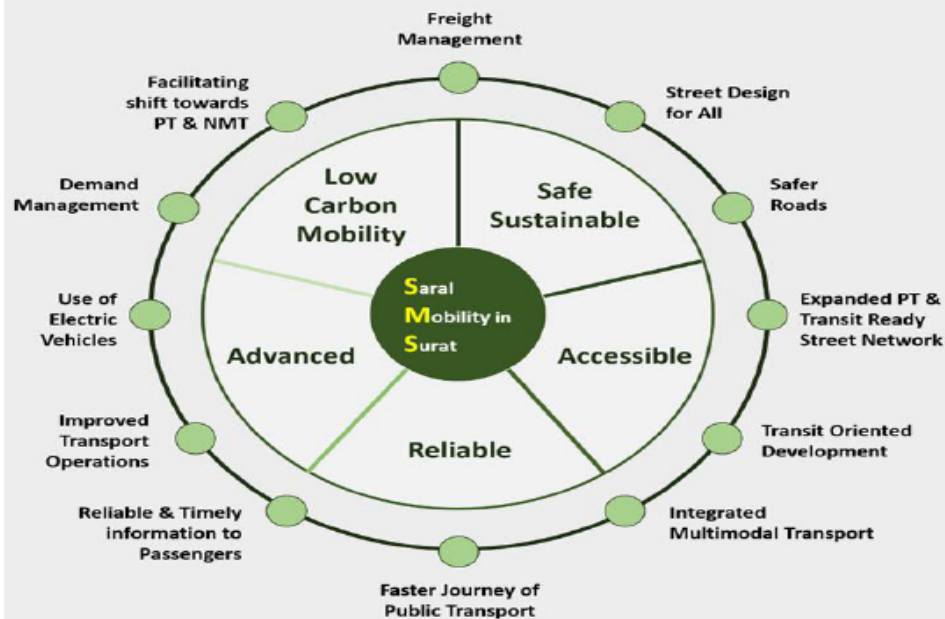
**A : ACCESSIBLE**

**R : RELIABLE**

**A : ADVANCE**

**L : LOW-CARBON**

**सरल परिवहन, समृद्ध जनजीवन !**



# THANK YOU